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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,216	03/14/2001	Shinya Kobayashi	HO4-3303/HO	8566

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EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/805,216

Applicant(s)

KOBAYASHI ET AL.

Examiner

LAM S NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-8 and 10-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-8, 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 2 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/30/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 2, 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Wen et al. (US 6046822).

Wen et al. discloses an image forming device comprising:

a head formed with a plurality of nozzles (FIG. 1a, element 47);

a converting unit (in term of “calibrator”) that converts recording data (in term of “the pixel values of the input image”) into driving data (in term of “waveform index numbers”) that defines driving pulses for corresponding ones of the plurality of nozzles (column 1, line 66 to column 2, line 3 and FIG. 2-3, 5);

a feed unit that feeds a recording medium in a first direction (FIG. 5: a feeder feeds the printing medium (element 120));

an ejection element (FIG. 1b, element 260) provided to each one of the plurality of nozzles (FIG. 1b, element 45) for ejecting an ink droplet (FIG. 1b, element 1b) from the corresponding nozzle onto the recording medium in response to the driving data while the feed unit is feeding the recording medium in the first direction; and

a memory that stores nozzle profile data including waveform data and timing data

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for each of the plurality of nozzles, the waveform data and the timing data indicating a waveform and a generating timing, respectively, of the driving pulse for each one of the plurality of nozzles (FIG. 2-3: a Look-Up-Table stores the waveform data  $A_1$ ,  $A_2$ ,  $W_1$ ,  $W_2$ , and timing data  $S_{1-2}$ ,  $S_{2-3}$  corresponding to the  $j$ th nozzle and column 4, lines 8-15: The delay times before start of pulses  $T_{Fij}$  and  $T_{Bij}$  also account for manufacturing variabilities between ink nozzles (such as different nozzle diameters and orientation), wherein

the converting unit converts the recording data into the driving data based on the nozzle profile data, the driving data is a sequence of pulse data each corresponding to one of plurality of nozzles and each including a plurality of data sets (FIG. 2-3, column 3, lines 43-50, and column 4, lines 1-25).

**Referring to claim 2:** an updating unit that updates the waveform data for each of the plurality of nozzles when a printing condition has been changed (column 5, line 38-56: a corresponding updating unit adjusts landing times and associated time delays according to the replacement variability).

**Referring to claim 12:** a leveling unit that levels generating timings of the driving pulses by changing the timing data of the nozzle profile data (column 5, line 38-51: a corresponding leveling unit that levels generating timings in termed of "landing times" and associated "time delays" according to the replacement variability; Column 2, line 11-15: control timing of the waveforms to compensate for physical variabilities between nozzles).

**Referring to claim 13:** a resolution changing unit that changes a time resolution, wherein each one of the plurality of data sets of the driving data having an original time resolution, and the resolution setting unit that sets the original time resolution of each of the data sets to a

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predetermined time resolution and wherein the original time resolution determines the waveform of each of the driving pulses, and the predetermined time resolution determines the generating timing of each of the driving pulses (column 5, line 38-49: a corresponding resolution changing unit that changes a time resolution in termed of "landing times" and associated "time delays" according to the replacement variability).

**Referring to claim 14:** wherein the original time resolution determines the waveform of each of the driving pulses and the predetermined time resolution determines the generating timing of each to driving pulses (column 4, line 13-24: predetermined pulse width and time delays between pulses).

***Allowable Subject Matter***

2. Claims 3-11 are allowed.

**Referring to claim 3:** The most pertinent art fails to disclose first and second measuring units that measure first and second distances between the target impact position and an actual impact position on the recording medium where the ink droplet has impacted with respect to the first and second direction, and an updating unit that updates the nozzle profile data based on the target impact position, the first distance, and the second distance. Therefore, the claimed invention is not disclosed by the cited art.

Claims 4-11 are allowable because they depend directly/indirectly on claim 3.

***Response to Arguments***

Applicant's arguments filed 04/19/2004 have been fully considered but they are not persuasive.

The applicants argued that the prior art fails to disclose wherein the converting unit

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converts the recording data into the driving data based on the nozzle profile data, the driving data is a sequence of pulse data each corresponding to one of plurality of nozzles and each including a plurality of data sets. However, as discussed above, Wen et al. disclose the above limitation.

Therefore, the argument is not persuasive.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN  
May 17, 2004



**HAI PHAM**  
**PRIMARY EXAMINER**